

IN THE SPECIFICATION

(1) At page 1, please replace the “Related Applications” paragraph with the following paragraph:

This application is a divisional application of U.S. Application Serial No. 09/561,763, filed April 28, 2000, which is a continuation-in-part of U.S. Patent Application Serial No. 09/431,367, filed on November 1, 1999, which is a continuation-in-part of U.S. Patent Application Serial No. 09/259,951, filed on March 1, 1999, now abandoned, all of which are hereby incorporated herein by ~~referenced~~ reference in their entirety. This application also claims the benefit of PCT/US00/05409, filed on March 1, 2000.

(2) At page 6, line 17 through page 7, line 12, please replace the text with the following paragraphs:

Another aspect of this invention features isolated or recombinant TWIK proteins and polypeptides. In one embodiment, the isolated protein, preferably a TWIK protein, includes at least one transmembrane domain. In another embodiment, the isolated protein, preferably a TWIK protein, includes at least one P-loop. In another embodiment, the isolated protein, preferably a TWIK protein, includes at least one transmembrane domain and at least one P-loop. In a preferred embodiment, the protein, preferably a TWIK protein, includes at least one transmembrane domain and at least one P-loop and has an amino acid sequence at least about 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95% or more identical to the amino acid sequence of SEQ ID NO: 2, SEQ ID NO:5, SEQ ID NO:8, SEQ ID NO:11, ~~SEQ ID NO:11~~ or the amino acid sequence encoded by the DNA insert of the plasmid deposited with ATCC as Accession Number PTA-1640. In another preferred embodiment, the protein, preferably a TWIK protein, includes at least one transmembrane domain and plays a role in generating an electrical potential across a plasma membrane, e.g., a neuronal plasma membrane or a muscle plasma membrane. In another preferred embodiment, the protein, preferably a TWIK protein, includes at least one P-loop and plays a role in generating an electrical potential across a plasma

membrane, e.g., a neuronal plasma membrane or a muscle plasma membrane. In another preferred embodiment, the protein, preferably a TWIK protein, includes at least one transmembrane domain and at least one P-loop, and plays a role in generating an electrical potential across a plasma membrane, e.g., a neuronal plasma membrane or a muscle plasma membrane. In yet another preferred embodiment, the protein, preferably a TWIK protein, includes at least one transmembrane domain and at least one P-loop and is encoded by a nucleic acid molecule having a nucleotide sequence which hybridizes under stringent hybridization conditions to a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:10, or SEQ ID NO:12.

In another embodiment, the invention features fragments of the proteins having the amino acid sequence of SEQ ID NO: 2, SEQ ID NO:5, SEQ ID NO:8, ~~SEQ ID NO:11~~, or SEQ ID NO:11, wherein the fragment comprises at least 15 amino acids (e.g., contiguous amino acids) of the amino acid sequence of SEQ ID NO: 2, SEQ ID NO:5, SEQ ID NO:8, SEQ ID NO:11, or an amino acid sequence encoded by the DNA insert of the plasmid deposited with the ATCC as Accession Number PTA-1640 In another embodiment, the protein, preferably a TWIK protein, has the amino acid sequence of SEQ ID NO: 2, SEQ ID NO:5, SEQ ID NO:8, or SEQ ID NO:11.